what I would say.

Q Dr. Kronenberger, have you conducted any firsthand studies or research on aggressive behavior in children or adults -- actually, I am sorry -- children or adolescents?

A Yes.

Q Do you conduct this by yourself or do you collaborate with other researchers?

A Virtually all of my research and certainly all of my research on aggressive behavior is as part of a research team. So we have teams of people that bring together different abilities so that we can do the research.

Q In general, what type of specialists or practitioners make up this team?

A To some extent it depends on what we are studying. In the case of our studies using neuroimaging, we have clinical psychologists, neurologists, social worker, neuroradiologists, physicists and neuroscientists on the team.

Q Then do you consult with each other throughout the course of the studies, or is everybody independent?

A We meet regularly.

When we go over findings, we meet when we can as a whole group. Obviously, occasionally people are out of town and things like that, but we try to bring the group together as many people as are there to review research finding and to share our interpretations of different results from our

different perspectives.

Q Have you conducted any firsthand studies or research on exposure to media violence?

A Yes.

Q In the particular context with adolescents, have you done any firsthand research studying the exposure of media violence on adolescents?

A Yes.

Q Did you find any type of relationship between the exposure to media violence and these teens?

A Yes. We have one study where we showed that teens with more -- with histories of disruptive behavior disorder and aggressive behavior report, and their parents report, more media violence exposure than teens from what we call a control sample that did not have that history.

Q What types of media are you referring to when you say that you study media violence?

A We study teens' and parents' reports of television and video game violence.

Q Is it all video games?

A Well, when we ask them the questions, we ask them questions about different types of video games, but some of those questions are also about violence in video games.

Q Have you done any research involving media violence exposure in adolescent brain activity?

A Yes.

Q Have any of these studies been reported or published in any publications?

A Yes. We have --

Well, again, depending on how you define brain functioning, we have one publication in a peer review journal that used functional MRI. We have one publication of a peer review journal that used what we call neurocognitive testing. We have, well, two presentations that we rely on that involved functional MRI as well.

Q Dr. Kronenberger, are you being retained as an expert in this lawsuit?
A Yes.
Q And are you aware that the lawsuit involves a statute or a law related to violent video games?
A Yes.
Q What have you been asked to do as an expert in this case?
A I've been asked to provide opinion and interpretation of my research.
Q Are you asked to make any types of conclusions about your research?
A Well, I've been asked to state how I interpret my research results. Oh, also I think I was asked if my research results were consistent with a part of the finding of the legislature.
Q And what is your understanding as to what part of that Illinois legislature finding you're supposed to --
A I would have to see it to know the exact quote, but in so many words it says violent video games affect the brain functioning of children.
MS. LIU: Your Honor, I would like to introduce some documents to the witness.
THE COURT: As far as exhibits, have people talked about them so that we don't need to go through some huge foundational thing? I'm guessing that -- are you talking about journal articles, things like that?

pushing your luck when you start to enter more than five variables or so, and we already had more than that. We thought it was justified because we wanted to do a very stringent test.

What we found -- when we accounted for all those variables was the Conners continuous performance test -- so one of the lab-based tests -- and the parent report of executive functioning ADHD in the environment continued to show that positive relationship with media violence exposure. So those two continued to be positive.

The Stroop color-word test was no longer statistically significant, but it was right on the margin. And the reason the margin makes a difference there is that is when you start to say maybe we made a mistake putting too many variables in, and if we had a bigger sample, it would have been statistically significant.

Now, you can't say without doing it, but you can warn that that might have happened. Remember the zero order correlation when we just correlated Stroop and media violence exposure was significant.

The self-report of executive functioning problems in the environment, that dropped out. That was no longer statistically significant. It didn't go down to zero, but it was not on that borderline. Our explanation in the article for that one was -- and this is fairly well-known clinically -- is that individuals are not -- particularly individuals with

A Well, actually let me --

There is one more big problem I want to mention and it was discussed a little bit in Dr. Williams' testimony, but the subject attrition rate was huge. Something like almost 60 percent, at least in terms of the dissertation, dropped out of the control condition.

I believe he reported something on the order of 25 or 30 percent, in the paper itself, or the article itself, dropped out, and a big portion dropped out of the treatment condition.

Q Why is that a problem?

A That is a problem in that --

Again, the reason you do random assignment is to, using sort of law as a probability, create groups that are likely to be equivalent on average on all kinds of dimensions that you have not measured.

But once you start allowing a large portion of people who are randomly assigned to one condition or another, you no longer have a true experimental study. You don't know that the people who dropped out of one condition are the same kinds of people than the people who dropped out of another condition.

Now, he did a good job in trying to do T-tests on those things that he had measured, and that is very commendable, but the problem is there are things that you have not measured.

Q What about the measure of aggression?

A The measure of aggression is suspect in a couple of ways. One is that measurement of argument is essentially a measure of verbal aggression. At least that is how it would usually be coded in the research literature.

And video games typically, for the most part, are modeling physical aggression. And as we have seen in some of the correlational studies, violent video game exposure tends to correlate better with measures of physical aggression than with measures of verbal aggression. So the measure itself is a little bit strange.

Using whether or not you had a fight in the last month creates somewhat of a problem, not insurmountable, in some ways, but basically people who had reported that they had been in an argument at time one could not show an increase in aggression across time no matter what. I mean, the most they could do at time two was show that they had another argument.

Similarly, we know one of the other measures, argument with a spouse, boyfriend, whatever, but we don't know what portion of the subjects didn't have a spouse, boyfriend, significant other, girlfriend, I mean, whatever the measure was.

I guess I would also like to point out that this argument, this whole bit about reliability of measures, you can -- in this dissertation, you essentially have two measures of aggression, and this was arguments with friends, arguments with

boyfriend and girlfriend, whatever. Those two measures themselves, as reported in the article, only correlated with each other .22.

So if you were to think about that in terms of a scale, that reliability -- I mean, that is essentially a reliability estimate -- is considerably lower than what Dr. Williams was saying was minimal for using a scale.

Q And another thing Dr. Williams relied upon talking about these mathematics is the meta-analysis by Dr. Sherry.

Could you tell us about that meta-analysis and in particular with relation to the Hoffman and Ballard studies that Dr. Williams talked about?

A Yes. One of the things that Sherry reported and Dr. Williams also talked about to some extent was this idea that, in experimental studies, there seemed to be a negative relationship between amount of time spent playing a game and effect size on some measure of aggression or aggression-related variables. And, in particular, they talked about -- focused on two studies. One was a Hoffman dissertation, the other was, I believe, Ballard and Weist, or Weist, W-e-i-s-t, I believe, both of which used mortal combat as the violent video game.

Hoffman had the participants play for 75 minutes, I believe, and, according to Sherry, reported an effect size of something like .05 whereas Ballard had participants play I believe it was 10 minutes or so and reported a much larger